
Metabolic Regulation in Pluripotent Stem Cells during Reprogramming and Self-Renewal.

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Public Summary:

Small, rapidly dividing pluripotent stem cells (PSCs) have unique energetic and biosynthetic demands compared with typically larger, quiescent differentiated cells. Shifts between glycolysis and oxidative phosphorylation with PSC differentiation or reprogramming to pluripotency are accompanied by changes in cell cycle, biomass, metabolite levels, and redox state. PSC and cancer cell metabolism are overtly similar, with metabolite levels influencing epigenetic/genetic programs. Here, we discuss the emerging roles for metabolism in PSC self-renewal, differentiation, and reprogramming.

Scientific Abstract:

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